

STRUCTURE AND METHOD TO ENHANCE BOTH NFET AND PFET
PERFORMANCE USING DIFFERENT KINDS OF STRESSED LAYERS

ABSTRACT OF THE DISCLOSURE

In producing complementary sets of metal-oxide-semiconductor (CMOS) field effect transistors, including nMOS and pMOS transistors), carrier mobility is enhanced or otherwise regulated through the use of layering various stressed films over either the nMOS or pMOS transistor (or both), depending on the properties of the layer and isolating stressed layers from each other and other structures with an additional layer in a selected location. Thus both types of transistors on a single chip or substrate can achieve an enhanced carrier mobility, thereby improving the performance of CMOS devices and integrated circuits.